This Week in SP333:6031: Homework, etc.

for the week of 27 August
Problems to submit on the date listed:

Week of 27 Aug

Monday :	1: 7, 14
Tuesday:	1: 17,18, Develop the Fourier serires for a 20 Hz triangular forcing function that drives between +10 N and - 10 N. (see figure on page 36,change amplitude and frequency)
Thursday:	Tipler* 4.72, 1: 26** * show all the steps in the problem solving method ** Assume the driving force from Tuesday, $k = 10^5\ N/_m$, and that Q = 100 and $\omega_o = 120\ \pi$ Describe the dominant response of the oscillator.
Friday:	Tipler 14.129,130

Physical Mechanics Paper

topic approval:	September 20, 2001
one page proposal	October 17, 2001
due:	November 16, 2001

Prepare a paper of order ten pages or longer on any topic that you desire subject to the requirement that you discuss the physics and particularly the mechanics associated with the topic. The paper must be submitted as a print copy plus an electronic copy in Word (.doc) format.

Get you topic approved. Include one or more graphs and one or more equations. Have a few footnotes. Be sure to provide proper attributions for borrowed ideas.

Choose a topic that you enjoy. Be deligent in your presentation, but stop just short of making the entire task a burden, Please consult your instructor as questions arise.

You may wish to research the journals: Scientific American, American Journal of Physics (particularly those over 30 years old), The Physics Teacher, Physics Education, Science, Physics Today, ...

Classical mechanics is a challenging and interesting subject with a fascinating history. The Lagrangian and Hamiltonian formulations are the basis for quantum mechanics and much of modern theory. Nevertheless, a classical mechanics course can be a little dry if you don't have the opportunity to select and investigate subjects that interest you personally. To give you such an opportunity, work for this course will include a final paper, due on Friday, November 16, on a mechanics-related subject of your choice. Previous years have seen a wide variety of topics, such as historical investigations, the physics of sports, ballistic missiles, spaceflight, dark matter, the expanding Universe, and chaos. Be creative! Have fun! These papers should be about 10 pages long, including a reasonable bibliography (not exclusively internet sources). Your instructor must approve of your topic by September 20. Make prior arrangements if you anticipate missing a deadline.